

**ENVIRONMENTAL ASSESSMENT**

# **Maverick Silver Exploration Plan Amendment**

September 2008  
3809/NVN-80751  
EA No. BLM/EK/PL-2008/015

**BLM**

Eiko District, Nevada



It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

**Bureau of Land Management**  
**Elko District**  
**3900 E. Idaho Street**  
**Elko NV 89801**  
**775-753-0200**  
[www.blm.gov/nv](http://www.blm.gov/nv)

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# MAVERICK SILVER EXPLORATION PLAN AMENDMENT ENVIRONMENTAL ASSESSMENT

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## APPENDIX A: Recommended Operating Procedures for Notice Level Operations in the Elko District

### Attachments:

Map 1: Maverick Springs Exploration Project Location Map

Map 2: Maverick Springs Exploration Project Access and Roads

Map 3: Exploration Plan of Operations, 2008 Proposed Disturbance

Map 4: Maverick Exploration, Mule Deer & Sage Grouse cumulative Effects Area

Map 5: Maverick Exploration, Immediate Watershed Cumulative Effects Study Area

# **1 INTRODUCTION**

In June 2008, Maverick Silver Inc. (Maverick) submitted an amendment to the Plan of Operations for the Maverick Springs Exploration Project (NVN-80751) to the Bureau of Land Management (BLM) for approval. The project area is in Elko County, Nevada, on public land administered by the Wells Field Office (see **Map 1**). The proposed plan includes existing and additional exploration activities to delineate a precious metal deposit with 24 drill sites within the 151 acre exploration area (see **Map 3**). Drilling activities by previous operators have disturbed 7.6 acres of land, and Maverick proposes another 6.3 acres of new disturbance.

This Environmental Assessment (EA) has been prepared for compliance with the National Environmental Policy Act of 1969. It updates information from the EA prepared in 2006 for the Maverick Springs Exploration Project (BLM/EK/PL-2006//006).

## **Background**

Exploration activities are proposed to evaluate the project area for the potential of future mine development. Angst Inc. (Angst), conducted exploration activities including drilling in the project area beginning in 1990 and did not complete the required reclamation. In 2002, Vista Nevada Corporation (Vista) continued with more drilling exploration activities for gold. Maverick Silver acquired the project in 2007 with its authorized 7.6 acres of disturbance. Maverick Silver is seeking to define a silver resource adjacent to the gold resources that previous operators were seeking.

Silver is the cheapest of precious metals. Ten years ago an ounce of silver was selling for \$5.31. The most recent quote on the London Metals Exchange was \$17.56(www.Kitco.com). In 2007, 95 percent of annual silver consumption is for industrial and decorative uses (455 million oz), photography (128 million oz), jewelry (163 million oz) and silverware (59 million oz) (The Silver Institute). Silver has a number of unique properties including its strength, malleability and ductility, its electrical and thermal conductivity, its sensitivity to and high reflectance of light and the ability to endure extreme temperature ranges. Silver's unique properties restrict its substitution in most applications. Examples of uses include batteries, bearings, brazing and soldering, catalysts, coins, electrical and electronics, electroplating, photography, medical applications, jewelry, silverware, mirrors, solar energy and water purification.

## **1.1 Purpose and Need**

BLM administers the surface acres of public land and federal subsurface mineral estate on lands open to location under the General Mining Law of 1872, as amended (Mining Law) and the Federal Land Policy and Management Act of 1976 (FLPMA). The proposed exploration activities are needed to evaluate the mineral potential of the land.

Maverick submitted the Plan Amendment with a Permit for Reclamation to BLM and the Nevada Division of Environmental Protection (NDEP), Bureau of Mining Regulation and Reclamation (BMRR), in accordance with BLM Surface Management Regulations codified at 43 CFR 3809 and Nevada state reclamation regulations at Nevada Administrative Code (NAC) 519A. The Mining Law allows the location and use of mining claims "under such regulations prescribed by law" and Section 302(b) of FLPMA recognizes the entry and rights of mining claimants while directing that the BLM take any action necessary to prevent unnecessary or undue degradation of the lands. These two laws form the primary statutory basis for the regulations at 43 CFR 3809 and BLM's purpose and need in reviewing and approving the Plan.

## **1.2     Relationship to Land Use Plan, Other Laws, Policies, and Plans**

The proposed action as described in Chapter 2 is in conformance with the Wells Resource Management Plan (RMP) Record of Decision, approved July 16, 1985, page 25, Minerals and Energy (BLM 1985). The decision states that “the public lands would be managed in a manner which recognizes the Nation’s needs for domestic sources of minerals.”

The proposed action is further consistent with other federal, state and local laws, regulations, policies and land use plans to the maximum extent possible. This includes the FLPMA, BLM 43 CFR surface management regulations and State of Nevada mining statutes and regulations as noted in the above section, and current land use policies of Elko County for federal land.

## 2 ALTERNATIVES

This chapter describes the Proposed Action, Modified Proposed Action and No Action alternatives. The proposed Plan amendment includes existing and additional exploration activities in order to delineate a precious metal deposit within the plan boundary. Maverick Silver has defined a rectangular plan of operations area covering 2,002 acres within which they will construct roads and drill pads and drill exploration holes inside a 151 acre exploration area (see **Map 3**).

### 2.1 Location and Access

The Maverick Springs Exploration Project is located in Elko County southeast of the Ruby Mountains in sections 9, 10, 11, 14, 15, 16, T. 26 N., R. 59 E, Mount Diablo Meridian (see **Map 2**). A 40 acre private parcel is located just south of the project boundary, however, no work is proposed on the private parcel. Exploration work proposed in this plan of operations is limited to Elko County in section 10, T. 26 N., R. 59 E. Cross country access and concurrent reclamation activities are proposed in the other sections. The work crew will either stay at Ruby Lake Resort or in Elko. Two vehicles per work day would drive to the site on the Ruby Wash Road. When staying in Elko the access route would be via State Route 228 over Harrison Pass.

### 2.2 Proposed Action

Maverick proposes to drill 24 reverse circulation drill holes within a 151- acre exploration area. Drilling will be done with a single track-mounted reverse-circulation drill rig and appropriate off-road support equipment. Water would be obtained from an existing well (Artemis Well). Four drill sites were drilled previously. One drill site was approved by the BLM in 2006. Nineteen drill sites are new. Maverick proposes to begin in the fall of 2008 by drilling five previously drilled holes. The number and location of additional holes will be determined by the results of those five holes. The drill program is expected to extend for 5 years. As shown in **Table 1**, roads and drill sites used by previous operators, Angst and Vista Gold, have disturbed 7.60 acres of public land. Another 0.23 acres was disturbed by Angst prior to approval of the 2006 plan. Maverick proposes another 5.83 acres of new disturbance, and would reclaim all of the disturbance, including the 0.23 acres disturbed for Artemis well and Angst camp site, for an estimated total of 13.66 acres.

**Table 1: Existing and Proposed Exploration Disturbance on Public Land (Acres)**

Exploration Activity	Pre-2001	2002 Notice & 2006 Plan	Proposed 2008	Proposed 2009-2014	Total
Cross-country roads		2.95	0.16	0.64	<b>3.75</b>
Constructed roads		3.02	0.34	1.28	<b>4.64</b>
Pre-2001 constructed roads	0	0	0	0.61	<b>0.61</b>
Drill sites: 30' x 40' (59)		1.63	0	0	<b>1.63</b>
Drill sites: 60' x 60' (24)		0	0.56	2.24	<b>2.80</b>
Artemis well/Angst camp (pre-1995)	0.23		0	0	<b>.23</b>
<b>Total</b>	<b>0.23</b>	<b>7.60</b>	<b>1.04</b>	<b>4.79</b>	<b>13.66</b>

Maverick will access the proposed drill sites using existing cross country trails where feasible to minimize disturbance. Five of the 2008 proposed drill sites are on previously drilled sites at which no earthwork was done and no sumps were dug.

### **2.2.1 Exploration Drill Pads**

Drill sites are to be 60 feet by 60 feet to accommodate angle drilling (see Map 3 for location of pads). Maverick proposes to construct a 9 cubic yard volume sump at each drill site to capture drill cuttings. Weed free straw or hay bales may be utilized as silt screens/traps in place of or in addition to sumps should excessive water flows be encountered during drilling. Drill holes will be angle holes up to 1,000 feet long with an expected 3 days required to drill each one. Each hole will be abandoned before the rig mobilizes to the next drill pad.

### **2.2.2 Road Construction**

Proposed new road construction includes; 2,500 feet of new cross country access and 3,360 feet of cut and fill roads (see **Map 3**). Drill roads are planned to be 14 feet wide. A track excavator will be used to cut new roads and construct drill sites. Maverick will access the proposed drill sites using existing cross country trails. Five of the 2008 proposed drill sites are on previously drilled cross country sites at which no earthwork was done and no sumps were dug. Where feasible Maverick will access all drill sites with cross-country trails to minimize surface disturbance. Tree limbs may need to be removed and some trees may need to be cut to gain access to a site. Timber and brush removal will be completed using power saws, avoiding trees with a dbh of 4 inches.

### **2.2.3 Equipment**

Drilling will be done with a single track-mounted reverse-circulation drill rig with appropriate off-road support equipment. Equipment proposed to be used during 2008 exploration activities includes:

- one track mounted drill rig
- a skidder mounted water transport with crane
- a water truck
- 4-wheel drive pickup trucks.

All equipment would be properly muffled and equipped with suitable and necessary fire suppression equipment, such as fire extinguishers and hand tools. All project related traffic would observe prudent speed limits to enhance public safety, protect wildlife and livestock and minimize dust emissions. All activities would be conducted in conformance with applicable federal and state health and safety requirements.

### **2.2.4 Water Use**

Water would be obtained from the existing Artemis well in NW1/4, NE1/4, section 11, T. 26N., R. 59E MDM. The well is 1290 feet deep with perforations at the water table between 1090 and 1290. Static water level is at 850 feet. Maverick will place a portable generator set to power the submersible pump which will pump into a temporary tank for use by the drillers and for dust control on roads.

All Nevada statutes for use of new and existing water sources would be followed under the Proposed Action. In the event that water is to be used from Indian Spring, or any other existing source, arrangements would be made with the permit holder and/or a temporary permit would be obtained. In the event that existing surface water is used, a sufficient amount of water would be left at the source for wildlife use.



### **2.2.5 Work Force**

One drill crew consisting of a driller and two helpers will be operating the drill on 12 hour day shifts. The work crew will either stay at Ruby Lake Resort or in Elko.

### **2.2.6 Surface and Ground Water Control**

Best Management Practices for sediment control would be employed during construction, operation, and reclamation to minimize sedimentation from disturbed areas. Proposed construction and drilling activities would avoid impacts to springs and seeps by placement of fabric and/or straw bale (certified weed-free) filter fences below surface disturbance that would occur upslope of water sources to prevent sediment runoff. In order to facilitate drainage and prevent erosion, waterbars would be constructed on all bladed roads, as needed, at BLM-recommended spacing's.

Sediment control structures could include, but not be limited to, fabric and/or straw bale (certified weed-free) filter fences, siltation or filter berms, mud pits, and down gradient drainage channels in order to prevent unnecessary or undue degradation to the environment. Sediment traps, constructed as necessary on drill pads, would be used to settle drill cuttings and prevent their release.

### **2.2.7 Solid and Hazardous Materials**

All refuse generated by the Project would be disposed of at an authorized landfill facility off site, consistent with applicable regulations. No refuse would be disposed of on site. Water and/or nontoxic drilling fluids or products, including Abantonite, Alcomer 120L, bentonite, EZ-mud, polyplus, and super plug, would be utilized as necessary during drilling and would be stored at the Project Area.

Hazardous materials utilized within the Project Area would include diesel fuel, gasoline, and lubricating grease. Approximately 500 gallons of diesel fuel would be stored in fuel delivery systems on vehicles and drill rigs. Approximately 100 gallons of gasoline would be stored in fuel delivery systems for light vehicles. Approximately 100 pounds of lubricating grease would be stored on the drill rigs or transported by drill trucks. All containers of hazardous substances would be labeled and handled in accordance with Nevada Department of Transportation (NDOT) and Mining Safety and Health Administration (MSHA). In the event hazardous or regulated materials, such as diesel fuel, were spilled, measures would be taken to control the spill, and the BLM, NDEP, and/or the Emergency Response Hotline would be notified, as required. In addition, a spill kit would be kept on site. If any oil, hazardous material, or chemicals are spilled during operations, they would be cleaned up in a timely manner. After clean up, the oil, noxious fluids, or chemicals and any contaminated material would be removed from the site and disposed of at an approved disposal facility.

### **2.2.8 Reclamation**

Final reclamation will be done by re-sloping the roads and drill sites with a track excavator. Cross country access will be scarified and reseeded. Piles of cuttings generated during drilling will be captured in sumps and buried. If the sumps overflow and cuttings escape containment they will be scattered either by hand or utilizing an ATV with a blade. Drill holes would be plugged prior to the rig moving off the site. Holes would be plugged in accordance with NAC 534.4369 through 534.4377 using pelletized bentonite or slurry. The top ten feet of the hole would be plugged with cement.

### Regrading and Reshaping

Regrading and reshaping of all constructed drill sites and exploration roads would be completed to approximate the original topography. Fill material, would be pulled onto the roadbeds to fill the road cuts and restore the slope to natural contours. Roads and drill sites would be regraded and reshaped with a front-end excavator or bulldozer. Reclamation of overland travel roads or pads that do not require replacement of sidecast material would be accomplished with an excavator bucket/ripper or a dozer to knock down and smooth any berms and relieve road compaction. Two track trails (trails created by overland travel) would be lightly scarified and left in a rough state as necessary to relieve compaction, inhibit soil loss from runoff, and prepare the seed bed. Should any drainages be disturbed, they would be reshaped to approach the pre-construction contours. The resulting channels would be of the same capacity as up and downstream reaches and would be made non-erosive by use of surface stabilization techniques (rip-rap) where necessary, and ultimately revegetated.

### Revegetation

Generally, seedbed preparation and seeding would take place in the fall after regrading of disturbed areas. Seeding will be done with an ATV equipped with a broadcast seeder and harrow. The seed mix would be confirmed in consultation with the BLM (see Table 2 below).

**Table 2: Preliminary Revegetation Seed Mixture**

Species		Application Rate (lbs <sup>1</sup> /acre)
Common Name	Scientific Name	
Canby bluegrass	<i>Poa secunda</i>	2.00
Thickspike wheatgrass	<i>Elymus lanceolatus</i>	4.50
Western yarrow	<i>Achillea millefolium</i> var. <i>occidentalis</i>	0.25
Prostrate kochia	<i>Bassia prostrata</i>	2.00
Blue flax	<i>Linum Perenne</i>	0.25
Small burnet	<i>Sanguisorba minor</i>	0.25
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	5.50
<b>Total</b>		<b>14.75</b>

<sup>1</sup>Pure live seed

### **2.2.9 Environmental Protection Measures**

In order to prevent unnecessary or undue degradation, operations will be conducted in accordance to the standards cited in CFR 3809.420 and with the Recommended Operating Procedures for Mining Notice Level Operations in the Elko District (see **Appendix A**).

Construction of new roads will be completed using an excavator or other suitable earth moving equipment. Roadways will be constructed in a manner to provide drainage towards embankments to allow seepage into top soil. Sites unsuitable for drainage towards the embankment will incorporate Best Management Practices (BMP's), i.e. straw bales, silt fencing, etc., to provide adequate evaporation and seepage. Reclamation will include complete re-contouring of drill sites and roads to their original grade followed by scarifying and seeding with the recommended seed mix. Seeding will be by broadcasting and a rake will be used to ensure soil covers the seeds.

Use of a track mounted drill rig with appropriate off-road support equipment will allow cross country travel without blading where ground slopes permit, thereby reducing surface disturbance. Should cross country routes become powdered and vegetation destroyed they will be reclaimed by re-contouring to the original grade and / or ripped and then reseeded.

All areas where destruction of the vegetation results from the operation will be scarified and reseeded. When scarifying areas to be seeded, efforts will be taken to minimize disturbance of the established vegetation. The scarifying and seeding will be done with an ATV equipped with a broadcast seeder and rake. The seed mixture shown in **Table 2** was developed after consultation with the Elko District Office with species selected from the Approved Reclamation Plant list. All seeding will be between October 1 and March 31.

Cross country roads established by prior operators and used during our drill program will similarly be reclaimed by re-contouring to the original grade and / or ripped and then reseeded should they become powdered.

Brush cut during road and drill site construction shall be spread over nearby roads and drill sites following seeding. Any brush piles created by prior operators along the drill sites or roads to be used in this operation will be spread out.

No permanent building of structures would be constructed on public lands within the plan boundary. Any trailers or storage containers that may be placed on the staging areas would be removed when the exploration activities have been completed. All equipment and supplies would be removed following completion of the proposed action. Other materials, including scrap, trash and unusable equipment would be removed on a regular basis and disposed of in accordance with federal and state regulations and laws.

The Artemis Exploration Company water well was constructed in 1990 to support the Angst Inc. drill program. The well shall be abandoned following Nevada State Regulations NAC 534.360 to 534.450. Site reclamation will be per the Recommended Operating Procedures for Notice Level Operations in the Elko District; namely, removal of well materials and the concrete pad around the well collar, complete recontouring to the original grade, seeding with the approved seed mixture and harrowing to ensure seed coverage with soil.

Prior to surface disturbance being conducted during the avian breeding season (April 1-July 31) Maverick would conduct an annual migratory bird nest survey within the plan boundary. The nest survey would be conducted by a qualified biologist within potential breeding habitat prior to Maverick conducting any surface disturbing activities during the avian breeding season. If nests are located, or if other evidence of nesting (i.e. mated pairs, territorial defense, carrying nest material, transporting food) is observed, a protective buffer (the size depending on habitat requirements of the species) would be delineated and the buffer area avoided preventing destruction or disturbance to nests until they are no longer active.

#### **2.2.10 Monitoring**

Plant growth would be monitored for three years after cessation of exploration and reclamation activities. If noxious weed growth is observed the weeds would be sprayed or mechanically killed. After three years, final bond release would be considered. Revegetation and reclamation

success would be evaluated and determined based on professional judgment. When it is determined that revegetation has been successful the bond would be released.

### **2.3 Modified Proposed Action**

Under the Modified Proposed Action, BLM would not approve construction of cut and fill roads or drill sites. All other methods, reclamation and environmental protection measures described for the Proposed Action would apply to the exploration sites. In the 2006 Plan of Operation, Vista was allowed “cross country” access and undeveloped drill sites without construction of any roads, pads or sumps. No cut and fill roads would be constructed. The 60’ by 60’ cut and fill drill pads would not be constructed. No sumps will be dug to contain drill fluids and cuttings. If cut and fill drill pads are not constructed Maverick may not be able to drill angle holes in the locations needed to properly evaluate the mineral resource. The scope of Maverick Silver’s drill plan would then need to be adjusted if they are not able to drill angle holes from the locations they need.

### **2.4 No Action**

Under the No Action alternative, the proposed plan amendment would not be approved by the BLM. Maverick’s proposed new disturbance in the amended plan of operations boundary would not be approved. Maverick Silver could continue exploration activities as approved in the 2006 Plan. Old disturbance created before reclamation bonds were required would not be reclaimed by Maverick.

### **2.5 Alternatives Considered but Eliminated From Further Analysis**

Alternatives to the Proposed Action that were considered by BLM, but eliminated from analysis in the next chapter of this EA, are summarized below.

#### **2.5.1 Limit Drilling to Winter Months**

Drilling could be limited to the winter months to reduce impacts to summer range for affected bird species and to reduce soil erosion. This was not considered because operations during winter weather can create worse surface resource damage and is more expensive than operations conducted during relatively dry and warmer seasons.

#### **2.5.2 Require Complete Reclamation of All Existing Disturbance Each Year**

Requiring complete reclamation of all previous operators disturbance would speed up revegetation and surface resource recovery in the event Maverick decided to end the project. Reclamation of each year’s disturbance at the conclusion of each operating season would minimize and speed up revegetation. This alternative was not considered because the BLM regulations do not have the authority to require the current operator to reclaim past operator’s disturbance. It was also dismissed because would incur unnecessary disturbance and expense to require Maverick to re-construct and reclaim roads and drill pads each year if the program continues into multiple years.

### 3 AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES

This chapter addresses the elements of the human environment identified through scoping that are present within the Project Area and could be directly, indirectly or cumulatively affected by the Project. As defined in regulations for implementing NEPA (40 CFR 1508), direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action but are later in time and farther removed in distance, yet are still reasonably foreseeable. Cumulative impacts result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. [40 CFR 1508].

#### 3.1 Affected Environment

The Maverick Springs Exploration Project is located in the Maverick Springs Range in southern Elko County approximately 50 miles south of Elko, Nevada and less than 1 mile from White Pine County (**Map 1**). Drill sites would be located on moderate to steep topography on the eastern flank of the range at elevations between 7200 and 7500 feet above mean sea level. The area is within the Basin and Range physiographic province, characterized by northerly trending mountains and valleys. There are no permanent bodies of water in the immediate vicinity. Maverick Springs lies approximately 1/2 mile south of any proposed drilling and has been dry since the early 1990's. All the proposed drill holes will be collared in Pennsylvanian and Permian limestone or Quaternary alluvium.

The geographic extent of resources potentially affected varies by the type of resource/use and impact. Cumulative Effects Study Areas (CESAs) have been developed and are listed with their total acreage in **Table 3**. The largest studies areas are to support the analysis for mule deer and sage grouse (**Map 4**). Most of the resource issues are analyzed within the immediate watershed of the 2,002 acres encompassed by the plan boundary, as shown on **Map 5**. The timeframe for the cumulative effects analysis is eight years, including three years of reclamation.

**Table 3: Extent of Cumulative Effects Study Areas**

Resource/Use	Name	Acres	Description
Cultural Resources	Plan Boundary	2,002	Amended Maverick Springs Project Area
Soils	Immediate Watershed CESA	9,283	Drainage area of Plan Boundary
Water Resources			
Vegetation			
Noxious Weeds			
Recreation			
Visual Resources			
Wildlife - Non-Game			
Special Status Species			
Migratory Birds			
Forest Resources	Plan Boundary	2,002	Amended Maverick Springs Project Area
Grazing Use	Grazing CESA	61,037	Maverick/Ruby #9 Allotment
Wildlife – Big Game	Deer CESA	419,323	Deer Range (summer and winter) and Migration Corridor
Greater Sage Grouse	Sage Grouse CESA	583,576	Summer, winter, nesting
Wild Horses	Wild Horse CESA	337,134	Maverick Medicine Herd Management Area

### 3.2 **Past, Present and Reasonably Foreseeable Actions**

Other past, present and reasonably foreseeable actions and uses that may contribute to cumulative impacts include livestock grazing, range improvement and vegetation management projects, dispersed recreation, right-of-way authorizations, and mineral exploration and development activities. The vicinity of the proposed action is sparsely populated, and the Maverick Springs project area is fairly remote from other human activity. Ruby Marshes Wildlife Refuge, fish hatchery, Ruby Lake Resort, and Shanty Town have about 25 year-round residents and are approximately 11 miles north. The Bald Mountain Mine is approximately 20 miles southwest. The small community of Cherry Creek is approximately 30 miles southeast.

Livestock management activities and range and wildlife habitat improvement projects are associated with the Maverick/Ruby #9 grazing allotment, Maverick Medicine HMA, and private ranching activities. Although there have been no recorded wild land fires or fire treatments in the project area, there has been disturbance associated with wild land fires in the Deer, Sage Grouse and Immediate Watershed CESAs. The fires have been small and few in number. Between 1999 and 2008 five fires have occurred in the study areas.

Other minerals activities in the CESAs include historic exploration and mining operations. Other companies have held mining claims in the vicinity in the past but did little work. In 1990-91, an earlier operator in the vicinity (Angst) cut exploration roads and built an exploration camp. Reclamation was partially completed at the time the operator went bankrupt. Approximately 6 acres of disturbance were left unreclaimed, including the exploration camp located in the NW/4, section 11, T. 26 N., R. 59 E. Although vegetation has grown back, the old roads are still visible and the old camp still has a water well, ponds, water lines, electric lines, sewage system and trailer sites. Vista Nevada Corp. disturbed 7.6 acres for mineral exploration between 2002 and 2007, before Maverick Silver acquired the Maverick Springs Exploration Project (Table 1 in Chapter 2 of this EA). This disturbance and associated impacts would occur under the No Action and Proposed Action alternatives.

Prior to 1994, oil and gas leases in the area but no wells were drilled. BLM offered oil and gas lease parcels within the Maverick Springs Project boundary in the March 2006 Oil and Gas lease sale. The parcels were purchased by Texola Energy Corp. (BLM, 2006).

There are no gravel pits or stone quarries within the project boundary. Gravel would be required for work on the Ruby Wash Road. Maverick Silver has contacted a contractor in Spring Creek to provide rip-rap and gravel for this project. Disturbance by right-of-ways within the CESAs primarily comes from the Odgers Ranch tribal land located to the east of the project area and from numerous two track roads. A search of the BLM LR2000 database and GIS database found the following infrastructure and activities.

**Table 4: Active Rights of Way within the CESAs**

Right of Way type	Acres
Roads	991
BLM Roads	1,276
Water and irrigation	7
Power transmission	1,053
Telephone lines	9
BLM range seedings	23,466

### **3.3 Effects of the Alternatives**

The direct, indirect and cumulative effects to potentially affected resources are discussed in this section. The analysis first identifies the existing condition of each resource of concern. The analysis of direct and indirect effects includes a comparative discussion of the Proposed Action, Modified Proposed Action and No Action alternatives. This includes impacts associated with disturbance from past and current exploration activities that would occur under both the No Action and Proposed Action alternatives and the additional impacts from new disturbance currently proposed for this exploration project. Each resource subsection concludes with an analysis of cumulative impacts from other related activities.

#### **3.3.1 Geology**

Geologic units outcropping in the vicinity of the exploration project include the following units: Quaternary alluvium consisting of sand, silt, and gravel of alluvial fans along present streams. The Tertiary Maverick Group is defined by the presence of tuff or tuffaceous sediments. There are intervals in the lower portion of this group that are composed almost entirely of sediments derived from the Paleozoic rocks. Cretaceous granite is a crystalline igneous plutonic rock. Permian Park City Group- Kaibab Limestone is a fossiliferous limestone with significant amounts of chert. Permian Rib Hill Sandstone is a series of clastic sediments ranging from fine silt to sand with variable carbonate content in the matrix. (Doe, T. 2005, personal communication, Coats, 1987)

##### Proposed Action

During exploration drilling only drill cuttings in an amount sufficient for assay are removed. This project would have only a minimal effect on minerals. The Proposed Action will remove a small volume of the mineral resource to determine if there is a commercially viable deposit.

##### Modified Proposed Action Alternative

Maverick may reduce the number of drill holes in their plan which will reduce the effects on minerals.

##### No Action

If Maverick were not allowed to explore, minerals would remain in place and undisturbed.

##### Cumulative Effects

If a silver ore body is discovered, developed and mined through this and subsequent plans the mineral potential in this area could be depleted.

#### **3.3.2 Socio-Economics**

Mining has been a source of income in Elko County since the 1850s. Mining and related development in the 1980s and 1990s caused rapid population growth in Elko and was a dominant force in shaping the socioeconomic character of the area. The in-migration of new residents has created changes in some aspects of daily life, such as increased traffic, overcrowded parks, and

higher crime rates. Low unemployment rates, greater diversity of services, and increased business opportunities were also a result of increased economic development.

#### Proposed Action

Employing one drill crew for 2 to 3 weeks a year for 5 years will create a small and temporary benefit to the local economy.

#### Modified Proposed Action Alternative

A limited drill program would provide a shorter term of employment for the drill crew and supervisor with a lesser impact on the local economy.

#### No Action

There will be no employment increase and associated impacts if this project is not approved.

#### Cumulative Effects

No measurable cumulative effects to the local economy would result from employment of another drill crew for the Maverick Springs exploration project.

### **3.3.3 Cultural Resources**

A Class III cultural resources inventory consisting of a 160-acre block surrounding the proposed disturbance was conducted between June 24-28, 2008, by Western Cultural Resources Management (WCRM). Five archaeological sites and seven isolated artifacts were recorded. One previously recorded site partially within the current survey block was also reexamined. Four additional previously recorded sites were reexamined near the proposed access roads to the drill pads. These data will be reported in BLM cultural resources report number BLM1-2680(P). The final report, along with BLM's determinations of site eligibility and project effects, will be submitted to the Nevada State Historic Preservation Office for incorporation into the statewide inventory per the guidelines established by the Nevada Statewide Protocol Agreement.

#### Proposed Action

Funding of this and previous cultural resources inventories have increased the pool of knowledge of cultural resources in the immediate drilling project area. Potential impacts include damage from road and drill site construction, drilling activities, drilling effluent runoff and the disturbance of archaeological materials by personnel associated with exploration activities. Project redesign would eliminate most impacts. It is anticipated that any site determined eligible for the National Register would be significant only due to their research potential (criterion 'd'), so impacts to setting, feeling and association are not an issue. All eligible sites, together with a minimum 30-meter buffer zone, will be flagged for avoidance prior to earth disturbing activities such as road and drill pad construction. Illicit collection of artifacts by exploration personnel in the project area has been a problem in the past. The operator will inform contractors and their personnel of the consequences of illegal activity and monitor actions of the employees. With implementation of the above measures, there would be no adverse effect to cultural resources.

#### Modified Proposed Action Alternative

Modification of the proposed action to exclude constructed roads or pads would lessen the potential for damage to cultural resources.



### No Action

There would be no effect to cultural resources under the No Action alternative.

### Cumulative Effects

By bringing mineral exploration activities and employment, there is an increased risk of looting in the project area.

### **3.3.4 Soil Resources**

Project area soils have very gravelly loam or very gravelly silt loam surface textures. Below the surface, the amount of gravel increases and textures become sandier. Soils occurring on slopes less than 15% are shallow over a duripan. Soils on slopes greater than 15% are shallow to moderately deep over limestone or dolomite bedrock. All the soils have high calcium carbonate content throughout. The wind erosion hazard is light given the vegetative community however, depending on the amount of removal this could be more. The water erosion hazard is slight on the lower elevation of the project area, with moderate to high erosion potential on steeper slopes. Wind erosion hazard is slight for all soils.

### Proposed Action

The proposed action could impact soil productivity in the project area through disturbance and resulting erosion by wind and water. Construction of six acres of trails, roads, pads and sumps will increase local soil erosion. Soil disturbance would be moderate to locally high in areas with constructed roads and drill sites. Sagebrush would be cut and grasses and forbs would be driven over. There would be some soil compaction where vehicles drive off road; however, these soils have high surface coarse fragment cover which would minimize impacts. Soils are most susceptible to compaction when they are moist or wet, and least susceptible when they are frozen or dry. Removal of sagebrush along the vehicle travel routes could minimally increase susceptibility to wind and water erosion where surface soil is exposed. Biological soil crusts, where present, would be crushed along the paths where off road vehicle driving occurs. Crusts are generally most susceptible to compressional impacts when they are dry and brittle. High surface coarse fragment cover minimizes impacts to crusts. The magnitude of soil impacts would largely be dependent on soil moisture conditions at the time of soil disturbance. The least amount of impacts would occur when soils are frozen, which would cause the least damage to soil crusts and compaction. Vehicle travel that occurs when soils are moist or wet would cause the most compaction, but would be generally better for biological soil crusts. Likewise, vehicle driving on dry soils generally causes the most damage to crusts, but the least amount of compaction. Most of the constructed roads and drill sites will occur on slopes steeper than 15% and will all occur on generally southeasterly facing exposures. Some localized moderate to high erosion potential would likely occur during high rainfall events.

Use and improvement of existing roads would minimize new disturbance. Implementation of best management practices and reclamation would reduce but not eliminate impacts to soils in the project area. During the 2 to 3 weeks a year for 5 years Maverick will be stabilizing the access roads by applying water and if needed gravel thus improving the stability of the existing roads and trails. Installation of sediment control structures would capture some eroded sediment, which would be used during reclamation. At the conclusion of this project, existing and planned disturbance will be reclaimed and revegetated thus improving the soil stability. Reclamation and monitoring would ensure that these impacts are only present in the short term.

### Modified Proposed Action Alternative

An exploration program in which there are no constructed roads or pads will result in fewer acres of proposed soil disturbance and a proportional reduction in the quantity of erosion.

### No Action

There would be no impacts to soils if no disturbance occurs.

### Cumulative Effects

The CESA for soils is the Immediate Watershed. Continued use of existing roads and two-track trails may create potential for local erosion due to un-revegetated disturbance, compaction and gullying.

### **3.3.5 Water Resources (Surface/Ground)**

Water resources within and/or near the project boundary include ephemeral/intermittent drainages, one spring and two wells. Maverick Spring is located on or adjacent to the 40-acre parcel of private land within the project boundary. There is no drilling proposed in the vicinity of the spring. BLM has not noticed water in the spring since the early 1990s. Springs in the area are associated with perched aquifers. Several drainages are located in the project area in the vicinity of the proposed drilling; however, there are no perennial bodies of water within the project boundary. There are two water wells in close proximity to the project. A well in the NW/4 NW/4, section 11, T. 26N., R. 59E. MDM, was drilled in 1954 to a depth of 30 feet and had static water at 9 feet. The Artemis well in NW/4 NE/4, section 11, T. 26N., R. 59E. MDM, was drilled in 1990 to a depth of 1290 feet and had static water at 850 feet. This well is at the edge of the project area boundary and is approximately 0.6 mile from the proposed disturbance. It is also the well where water will be obtained for injection during drilling. Another well has been developed at Willow Spring in White Pine County, section 21, T. 26 N., R. 59 E.

### Proposed Action

Surface disturbing activities are not expected to impact water quality of perennial surface water. Construction of 6 acres of roads and drill sites will increase the potential for localized erosion and may increase surface runoff. Sagebrush removal along the cross country vehicle travel routes would increase surface runoff in the short term. These activities could cause a temporary increase of suspended solids and/or other constituents in ephemeral/intermittent drainages, but these impacts would not impact perennial sources or riparian areas.

Mitigation of impacts along with implementation of best management practices would further reduce potential impacts to surface water quality. Revegetation of re-contoured roads and drill sites would reduce impacts after vegetation has been established. Short term mitigation of runoff described in the proposed action may be required to minimize degradation of surface water quality. Successful grass revegetation should occur within 2 years of reclamation along the vehicle routes where sagebrush was removed based on results from similar disturbance and reclamation efforts in the project area. Following successful reclamation, runoff rates would be reduced. Leaving cut sagebrush on the soil surface would help reduce runoff, improve infiltration, and trap sediment.

Exploration under the proposed action is not expected to impact groundwater resources. Potential impacts include draining and contamination of perched or other aquifers, however, adherence to drilling regulation expressed in NAC 534.4369 through 534.4377 minimize probability of this occurring. There will be no impacts to local springs if Nevada borehole

abandonment regulations are implemented for each drill hole. Maverick will close and abandon the Artemis water well at the conclusion of this project if no mineral deposit is discovered. Maverick will also conduct reclamation at the Angst camp site, including closure of the septic system. If Maverick had not included Artemis well and Angst camp site reclamation and closure in their Plan the BLM would have to do this because the responsible party (Angst) has an inadequate bond in place for this purpose.

#### Modified Proposed Action Alternative

A reduced exploration program will result in fewer acres of road and drill site construction and reduced potential for degradation of the non-existent surface waters.

#### No Action

Under the no action alternative there would be no effect to ground water or surface water. During exploration drilling under the Notice, Vista did not hit water that they were aware of. Vista was injecting water during drilling and it is possible to intersect small volumes of water in the bed rock without recognizing it.

#### Cumulative Effects

Minimal cumulative effects are predicted to water quality in the 9,283 acres encompassed by the Immediate Watershed CESA from the proposed project. After plants reestablish, there should be no residual impacts except for evidence of cement plugged drill holes.

Short term exploration drilling for 2 to 3 weeks a year for 5 years will create minimal impact to the groundwater at the site of the Artemis Well. At the conclusion of this exploration plan Maverick will close and abandon one of the few water sources in the Maverick Springs Range, thus reducing the value of the mineral deposit to later operators.

### **3.3.6 Air Quality**

The project area is located in an unclassified area for all criteria pollutants, and thus is considered to be in attainment with the National Ambient Air Quality Standards. Air quality is generally considered good. It is located in a Class II Prevention of Significant Deterioration Area (PSD), which allows for moderate growth or degradation of air quality within certain limits above baseline air quality. The nearest Class I, Prevention of Significant Deterioration Area is located at the Jarbidge Wilderness Area in the northeast portion of the state.

#### Proposed Action

Some dust will be created during construction of roads and pads for a few weeks a year for 5 years. Two trucks and a water truck will kick up dust along the Ruby Wash road and access roads during drilling operations for 2 to 3 weeks a year for 5 years. Maverick will mitigate this dust evolution by watering the roads as needed to keep them from dusting out. Drilling will create about 5 minutes of dust production at the beginning of each hole as the drill crew collars the hole and places a surface casing. After that drilling is usually done wet with no dust production. The excavator, drill rig and support trucks will create a tiny amount of emissions during drilling operations which will dissipate rapidly.

#### Modified Proposed Action

Maverick may conduct a shorter drilling program if they are not allowed to construct roads and pads thus reducing dust. The shorter drilling program will produce less dust.

### No Action

If the BLM does not approve this plan there will be no increase of dust from a drill program.

### Cumulative Effects

The Ruby Wash road will be used for access by the geologist and drill crew for 2 to 3 weeks a year for 5 years during the drilling program thus creating some local dust in the wind along about 16 miles of dirt road. The minor addition of engine emissions may contribute to Global Warming.

### **3.3.7 Vegetation**

The plant species dominating the project area include Wyoming big sagebrush, mountain sagebrush, black sagebrush, antelope bitterbrush, Utah serviceberry, snowberry, golden and squaw current, pinyon pine, Utah juniper, curlleaf mountain mahogany, bluebunch wheatgrass, needlegrass, and assorted forbs species.

### Proposed Action

The 13.6 acres of disturbance from road and drill site construction during exploration activities would crush or remove vegetation. After the traffic has ceased on cross country access some plants will recover rapidly. Revegetation of recontoured roads and drill sites will allow for re-establishment of vegetative cover the disturbed areas at the end of this exploration plan.

### Modified Proposed Action Alternative

A reduced exploration program will result in fewer acres of re-disturbance of cross country access. Fewer acres of road and drill site construction will result less loss of native vegetative cover in the project area.

### No Action

Under the no action alternative there would be no addition loss of vegetation. Previous operators disturbed 7.6 acres. The acres seeded are reestablishing vegetative cover. Other cross country access areas are successfully recovering after traffic ceased.

### Cumulative Effects

A small increase will happen due to revegetation of the roads and drill sites at the end of this exploration plan.

### **3.3.8 Livestock Grazing**

The project area is in the Maverick/Ruby #9 grazing allotment which encompasses 61,037 acres. Livestock permitted use is 2,774 Animal Unit Months (AUMs). The grazing permit is held by 7H Ranch LLC. Season of use is November 1 to February 28 and July 1 to October 31. Due to lack of water in the area, very little grazing has occurred in the project area since July 2001.

### Proposed Action

The proposed action total disturbance totals 13.6 acres or 0.02% of the 61,037 acre allotment. BLM compliance inspections confirm that plants reestablish themselves quite rapidly once traffic ceases to use the cross country drill roads and drill sites. At the conclusion of reclamation the seeding of recontoured roads and pads may introduce favorable forage species.

### Modified Proposed Action Alternative

An exploration program with no constructed roads or pads will result in fewer acres of disturbance and less acres of reclamation seeding forage species.

### No Action

Under the no action alternative, the 7.6 acres of vegetation that were disturbed and seeded by previous operators would continue re-establishing itself.

### Cumulative Effects

The proposed total disturbance is a tiny fraction of a percent of the 61,037 acre allotment. Reclamation of all existing and planned disturbance will improve the grazing by introducing favorable forage species.

## **3.3.9 Forest Resources**

About 60% of the area is pinyon and juniper woodland. The BLM allows harvest of dead and down pinyon, juniper and mahogany in this area.

### Proposed Action

Under this alternative, some small diameter (less than 4 inch dbh) pinyon, juniper and mahogany will be removed to provide access for drilling. An unknown number of these trees will be removed in the process of road and drill pad construction, which would disturb about 6 acres of pinyon-juniper woodland.

### Modified Proposed Action Alternative

This alternative will have more small diameter (under 4 inch dbh) trees removed for drill access and sites but none will be removed by road and pad construction.

### No Action

No additional trees will be impacted if this project is not approved.

### Cumulative Effects

The CESA for forest resources is the 2,002-acre plan area. Cumulative impacts from removal of trees from 6 acres would be negligible. Harvest of pinyon juniper and mountain mahogany could continue.

## **3.3.10 Recreation**

Recreation in this area is limited because there are few roads and few water sources. Seasonal hunting use and harvesting of pine nuts occur in the Maverick Springs Range. The Angst camp site is accessible by recreational vehicles and is regularly used by hunters in the fall.

### Proposed Action

During the 2 to 3 weeks a year for the 5 year span of this Plan wildlife game species may avoid the immediate area in which the drilling activity takes place. Hunting and pine nut gathering will be discouraged in the immediate area of the drill operations for safety reasons. After Maverick reclaims the Angst camp site, this area will not be as attractive to hunters and pine nut gatherers.

#### Modified Proposed Action Alternative

If the BLM does not allow construction of cut and fill roads and pads, Maverick may reduce the size of their drilling program which will reduce impacts to recreational use.

#### No Action

If the BLM does not approve this Plan there will be no impact to recreational hunting or pine nut gathering. The Angst camp site will not be reclaimed.

#### Cumulative Effects

For a few weeks a year for 5 years there may be reduced recreation use in the immediate area of the Maverick drilling operations. After the Angst camp site is reclaimed, there will be less attraction to recreationists in this area.

### **3.3.11 Visual Resource Management**

The project area is on ridge crests, flanks and valleys between taller mountains and consists of fairly steep hills to low flat ground. Dominant colors are various shades of green, tan, brown, and gray. The project area is located in a Class IV Visual Resource Management (VRM) area. The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. These management activities may dominate the view and be the major focus of viewer attention. There are no range improvements in the vicinity of the disturbance area, however, there is one developed spring and two wells near the project area. The project area is a Class IV Visual Resource Management area with little human development.

#### Proposed Action

This Plan increases very localized disturbance in pinyon-juniper habitat which cannot be seen from outside the small drainage to the east of the drill project area. None of the disturbance will be visible from more than ½ mile from the drill area. The visual impacts of these activities should be minimized through careful location, minimal disturbance, and repetition of the basic elements. Short linear drill roads would form a color contrast to the surrounding areas due to the differences in vegetation. The linear visual impacts will lessen with time as plant growth reaches sizes similar to surrounding vegetation. Following reclamation, the impacts to visual resources would be minimal and Class IV objectives would be met.

#### Modified Proposed Action Alternative

An exploration program in which no cut and fill roads and pads are constructed will result in fewer impacts to visual resources that would better meet Class IV objectives compared to the Proposed Action.

#### No Action

Linear disturbance from existing roads and the currently approved exploration activities have caused color and texture differences. Old disturbances are still visible in the area and some of the pre-bonding disturbance would not be reclaimed or revegetated by Maverick.

#### Cumulative Effects

The CESA for this project is the immediate watershed. Linear disturbance from existing roads and past and present mineral exploration in the CESA have caused color and texture differences

which impact visual resources. The proposed exploration would cumulatively cause a slight impact on visual resources.

### **3.3.12 Wild Horses**

The Maverick Exploration project is located within the Maverick-Medicine Herd Management Area (HMA). BLM manages the herd to maintain an appropriate management level of 166-276 wild horse in this 337,134-acre HMA.

#### Proposed Action

The proposed 13.6 acres of total disturbance is approximately 0.004% of the HMA. This disturbance would have minimal effect on wild horses. Noise from drill rigs would disturb the animals 2 to 3 weeks a year for up to 5 years. Horses would avoid the area temporarily. The past 5 years of exploration and reclamation demonstrated that forage would establish itself quickly and be available for animal use.

#### Modified Proposed Action Alternative

If the BLM does not allow construction of cut and fill roads and pads, Maverick may reduce the size of their drilling program. Reduced constructed road and drill site disturbance will result in fewer acres of temporarily lost forage in this HMA.

#### No Action

If the BLM does not approve the Plan then there would be no additional disturbance of horses by noise or by disturbance of vegetation/forage.

#### Cumulative Effects

This Plan will disturb a small fraction of a percent of the Herd Management Area for 2 to 3 weeks a year for up to 5 years. There is open space where the horses could go, with no active human disturbance /habitation in the area. Ruby Marsh, approximately 11 miles north, is the closest area with human developments. Abundant road apples and mare piles are found at the Angst camp site, which suggests the occasional hunter occupation of the park has not negatively impacted the local equine use patterns.

### **3.3.13 Noxious Weeds**

Noxious weeds are proliferating throughout the west. Noxious weeds are aggressive, ecologically damaging, undesirable plants which threaten native ecosystems, biodiversity, and habitat quality. Several thistle plants were discovered during initiation of exploration under the Notice in 2002. Vista applied herbicide to the thistles several times during their Notice exploration activities. No new noxious weed infestations have been identified on the project in the recent visits.

#### Proposed Action

If the BLM approves this Plan, two trucks will travel to the project daily for 2 to 3 weeks a year for up to 5 years with the potential of importing noxious weeds to the proposed drill areas. Ground disturbance can enhance the spread of noxious weeds. By not cutting roads with a blade, ground disturbance is minimized and the potential to spread noxious weeds is reduced. If thistles or other noxious weeds are observed during exploration operations they would be sprayed with herbicide or removed mechanically. Removal or killing of any noxious weeds would be required

prior to bond release. Control of any noxious weeds during exploration and successful reclamation of disturbed sites with desired species prior to release of the reclamation bond is expected to ensure that the exploration project does not increase the risk of infestations in the area.

#### Modified Proposed Action Alternative

A reduced exploration program with fewer acres of disturbance and no cut and fill disturbance would reduce the potential for noxious weed infestations.

#### No Action

Under the no action alternative the site, no additional disturbance would occur, and successful reclamation of areas disturbed by the 2006 plan would be expected.

#### Cumulative Effects

The CESA for noxious weeds is the immediate watershed. Future increase in vehicle traffic from dispersed recreational use and other ground disturbing, in combination with the proposed exploration activities, are not expected result in any measurable increase in noxious weeds in the area.

### **3.3.14 Migratory Birds**

Migratory birds known or thought to occur in the project area are listed below.

**Table 5: Nevada Partners in Flight Bird Conservation Plan Ecotypes Relevant to the Proposed Action**

	Cliffs and Talus	Montane Riparian	Montane Shrub	Pinion Juniper	Sage
Black-billed Magpie	X	X			
<b>Black Rosy Finch</b>	X		X		X
Black Throated Gray Warbler				X	
<b>Burrowing Owl</b>			X		X
Calliope Hummingbird		X	X		X
Clark's Nutcracker		X			
Cooper's Hawk		X			X
<b>Ferruginous Hawk</b>	X				X
Gray Flycatcher				X	X
Gray Vireo				X	
Juniper Titmouse				X	



	Cliffs and Talus	Montane Riparian	Montane Shrub	Pinion Juniper	Sage
Lewis' Woodpecker		X			X
<b>Loggerhead Shrike</b>			X		X
MacGillivray's Warbler		X			
Mountain Bluebird			X		
Mountain Chickadee			X		
Mountain Quail			X		
<b>Pinyon Jay</b>				X	
Prairie Falcon	X				X
Red-naped Sapsucker					X
<b>Sage Grouse</b>					X
Sage Sparrow					X
Sage Thrasher					X
Scrub Jay				X	
Scott's Oriole				X	
Short-eared Owl			X		
Swainson's Hawk			X		X
Vesper Sparrow					X
Virginia's Warbler		X			
Western Bluebird				X	
Willow Fly Catcher		X			
Wilsons Warbler		X			

### Proposed Action

Many of the migratory bird species that inhabit the area are associated with either sagebrush vegetative types or are tree utilizing species. Sagebrush, grasses, and other low growing plants on 13.6 acres are proposed to be disturbed during exploration activities. It is anticipated that migratory birds would be subjected to a minimum of disturbance as the proposed action will occur outside of breeding season timelines, most of the disturbance would occur in the sparsely vegetated understory of Pinyon-Juniper woodland, and mature trees utilized for roosting and

foraging will not be disturbed. If trees need to be removed to accommodate access to drilling sites, only trees with a less than 4 inch diameter will be removed. This will allow for a dispersed removal of woodland that will not remove a significant percentage of trees from any given area.

The migratory bird nesting season is from April 15 through July 31. Maverick is aware that disturbance of an active nesting site is prohibited by the Migratory Bird Treaty Act (MBTA) and has committed to conducting annual nesting surveys for migratory birds prior to extended site development during nesting season to identify breeding and sterile adult birds or nest sites within the area to be disturbed. If active nests are present or if other evidence of nesting (i.e. mated pairs, territorial defense, carrying nest material, transporting food) is observed, Maverick would coordinate with the BLM to develop appropriate protection measures for these sites, which could include avoidance, construction constraints, and/or establish buffers (Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds).

#### Modified Proposed Action Alternative

A reduced exploration program will reduce the number of days per year in which there will be equipment on site to disturb nesting species.

#### No action

Under the no action alternative there would be no effect to migratory birds.

#### Cumulative Effects

The CESA for migratory birds is the Immediate Watershed. Future increase in vehicle traffic from dispersed recreational use and disturbances are not expected to result in any measurable increase in impacts to migratory birds.

### **3.3.15 Wildlife**

The wildlife species that inhabit the project area are typical of arid/semi arid environments in the central Great Basin. The pinyon-juniper and sagebrush ecotypes in the project area provide potential habitat for a variety of mammals, including mule deer (*Odocoileus hemionus*), elk (*Cervus canadensis*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus*), black-tailed jackrabbit (*Lepus californicus*), wood rat (*Neotoma dp.*) chipmunk (*Tamias spp.*), long-tailed weasel (*Mustela frenata*), golden-mantled ground squirrel (*Spermophilus lateralis*), deer mouse (*Peromyscus maniculatus*), kangaroo rat (*Dipodomys spp.*), and least chipmunk (*Tamias minimus*). Reptiles found include the fence lizard (*Sceloporus occidentalis*) and sagebrush lizard (*Sceloporus graciosus*).

Ten species of raptors are known to inhabit the area around the proposed action. Turkey vulture (*Cathartes aura*) are common. Raptors that are also included in the listing of BLM-Sensitive Species (BLM Information Bulletin No. NV-2003-097, July 29, 2003) include Red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), Prairie falcon (*Falco mexicanus*); American kestrel (*Falco sparverius*); Burrowing owl (*Athene cunicularia*); Ferruginous hawk (*Buteo regali*); Golden eagle (*Aquila chrysaetos*); Bald eagle (*Haliaeetus leucocephalus*); and the Peregrine falcon (*Falco peregrinus*). No raptor nests are known to be in or near the project area, however burrowing owls have been reported in the valleys surrounding the Maverick Springs range. The burrowing owl, bald eagle, golden eagle, ferruginous hawk and peregrine falcon will be discussed in the next section on Special Status Species.

Elk are expanding each year as herd numbers increase and animals move into previously unoccupied suitable habitat. There were approximately 2,009 animals recorded in 2004 (Nevada Department of Wildlife, Big Game Statue 2003-2004), and elk have been recorded utilizing the Maverick Springs range around the project area. In a winter ground survey conducted during 2008 seventy-eight elk were counted. This elk herd has increased slightly over the last few years; however increases have come slowly due to limited calf production. As yet seasonal use areas are unknown.

The project area is located within known mule deer summer range surrounded by transitional range. There is a migration route of mule deer to the south of the Maverick Springs range through the Ruby Mountains that funnels deer into the project area.

#### Proposed Action

Potential direct impacts to wildlife would consist of temporary habitat loss and disturbance from human activity and noise. Approximately 151 acres of existing wildlife habitat may be impacted by exploration activities over a 5 year period, with actual length of time based on exploration results. Wildlife sensitive to human activity and noise could be temporarily displaced as a result of the project. Construction and/or maintenance of roads and drill pads and the operation of drilling equipment could disturb wildlife due to the presence of humans and by creating noise and dust. There will only be one drill rig at the project site, so activity would be confined to a single site for approximately a three day period before movement to the next site. It is anticipated that there will be minimal long term effects to wildlife habitat since reclamation and reestablishment of vegetation would take place one year after project completion.

**Table 6: Reclamation and Revegetation Schedule**

Techniques	1 <sup>st</sup> Quarter (Jan-Mar)	2 <sup>nd</sup> Quarter (April-June)	3 <sup>rd</sup> Quarter (Jul-Sept)	4 <sup>th</sup> Quarter (Oct-Dec)	Year(s)
Regrading		X	X	X	Within one year of Project completion
Seeding				X	Within one year of Project completion
Monitoring		X	X		3 years beyond regrading and reseeded

The proposed project is located in Area 10 which contains nearly 25% of Nevada's mule deer population. The deer in these unit groups have been marginally reduced following wild land fires that have occurred in the area since 1999. Invasive weeds have invaded some of the burned areas and in areas where perennial grasses and forbs are found, in time the shrubs are expected to recover to pre-burn levels. Despite drought-like conditions in Area 10 during the summer of 2007, the area was spared from the catastrophic fires that ravaged Area 6 in 2006 and 2007.

#### Modified Proposed Action Alternative

A reduced exploration program will result in fewer acres of lost Pinyon-Juniper habitat and a proportional reduction of impacts to the wildlife species found there.

#### No action

Under the no action alternative there would be minimal effect to wildlife until reclamation of the existing disturbance is completed.

### Cumulative Impacts

As shown in **Table 3**, the Deer CESA was developed to assess impacts from the project activities and other actions to the mule deer herd that resides in the various habitat types as well as utilizes the migration corridor within the area. To accomplish this, the entire range that the deer herd utilizes in their annual cycle was used as the basis for the CESA boundary. Historic studies have documented that the deer migrating and utilizing the project area have crucial habitats to the north and west. Deer from the Ruby Mountains located in NDOW Management Units 101-103 migrate south and east in the spring to their summer range in NDOW Management Unit 104 where the project is located. The deer will stay on the summer range until November when they begin to return to their winter ranges.

Past and present actions in the Immediate Watershed and Sage Grouse CESAs include livestock grazing, range improvements, wild land fires, fire treatments/seedings, recreation, railroads, utility and other ROW's, mineral exploration and mining. Hunters often camp at the Angst camp (NW/4, section 11, T.26 N., R. 59 E.) in the fall. **Table 7** outlines the disturbance acres from historic fire, fires during the 2008 season and fire treatment/seedings in these CESAs.

**Table 7: Historic Fires and Treatments in Wildlife Cumulative Effects Study Areas**

<b>CESA</b>	<b>Historic fires (acres)</b>	<b>2008 Fires</b>	<b>Treatments (acres)</b>
Immediate Watershed	1073	0	539
Deer			
Summer	0	727	0
Crucial Summer	1426	0	0
Crucial Winter	265	0	0
Intermediate	1073	1151	843

Livestock grazing and range improvement activities are expected to continue and would not contribute to cumulative impacts to wildlife. Recreation activities and impacts may increase as a result of population growth near Elko, Wells, Wendover and Ely. Wild land fires, fire suppression and burned area rehabilitation are also likely to occur within the CESAs in the next 5 years. This is likely to change habitat plant communities, in some cases to somewhat less diverse communities; especially in the short term because fire rehabilitation seed mixes include limited species.

Dispersed recreational use in the area has resulted in new trails, which are vulnerable to the introduction of nonnative, invasive species that contribute to the reduction in habitat quality. Off road vehicle use can cause fragmentation and degradation of wildlife habitat. The use of the Angst camp in the fall by hunters causes a temporary increase in disturbance from human activity in the CESAs.

Mineral exploration activities are expected to continue based on current supply and demand of minerals and commodities over the next eight years. If this exploration project advances to a mine operation, impacts will be reviewed specific to the proposed mine disturbance.

### **3.3.16 Special Status Species**

There are no known federally threatened, endangered or candidate species within the proposed project area. No special status plant species have been identified by the BLM or the Nevada

Natural Heritage Program (NNHP) as occurring within the project area. Therefore the following discussion refers to BLM-Sensitive animal species.

#### Bats

Most bats species in the Elko district are sensitive. Bats are known to inhabit the area surrounding the proposed action, especially the species *Myotis evotis* and *M. volans* that have been recorded along the flanks of the Maverick Springs range. Both species roost in trees, but any natural opening in cliff faces and talus slope as well as any historic structures in the area can be potential habitat on a permanent or temporary basis.

#### Pygmy Rabbits

Pygmy rabbits (*Brachylagus idahoensis*) are typically found in areas of tall dense sagebrush cover, and are highly dependent on sage brush to provide both food and shelter throughout the year. Their diet in the winter consists of up to 99 percent sagebrush. Pygmy rabbits, their sign and burrows have been observed in the Ruby and Long Valley areas surrounding the Maverick Springs range as well as in lowland vegetation areas scattered throughout the range. There have been reported sighting within the district of pygmy rabbits utilizing higher elevation pinyon-juniper habitat, so individuals may be encountered within the project area.

#### Sage Grouse

The BLM and NDOW have identified the project area as occurring within greater sage grouse upper elevation, summer habitat. The nearest sage grouse strutting grounds (leks) are approximately 9.25 miles north of the project area.

#### Ferruginous hawks

No ferruginous hawk nests are known to occur within one mile of the project area, though ferruginous hawks have been seen foraging in the vicinity. There is potentially suitable nesting habitat for ferruginous hawks present within the project area. Nest sites are normally located at the interface between pinyon and or/juniper woodland and open sage.

#### Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*), a BLM sensitive species, are found in Alaska and Canada south to southern Florida and the Baja peninsula in Mexico. Nesting distribution is largely restricted to coastal areas, lakes and rivers. In Nevada and western Utah, bald eagles congregate in valley areas that have large populations of black-tailed jackrabbits (NDOW 1985). One bald eagle nest has been reported in northeastern Nevada. Although no bald eagles nests are known in the project area, bald eagles could roost and winter forage in the vicinity.

#### Burrowing Owl

Habitat for burrowing owls is present in the area affected by the proposed action. Burrowing owls occupy drier grassland and sagebrush habitats. Burrowing owls nest in underground burrows often excavated by ground squirrels, badgers, and other mammals. Though there have been no reported sighting, suitable sagebrush habitat for burrowing owls exists within the area affected by the proposed action.

#### Peregrine Falcon

The peregrine falcon may be a transient forager through the Maverick Springs Range but the only documented nesting habitat is within the district is on the eastern slopes of the Pequop Range.

Proposed Action

Direct impacts to bats, pygmy rabbits, greater sage grouse and other special status animal species sensitive to human activity and noise could include temporary displacement as a result of the project. Construction or maintenance of roads and drill pads and the operation of drilling equipment could disturb special status animal species due to the presence of humans and by creating noise and dust. Foraging activities by special status animal species within the project area could continue depending on the amount, concentration and distribution of exploration equipment. Habitat fragmentation could occur if enough activity is present in high enough concentration at one time to cause avoidance. Impacts to special status animal species would be lessened by reclaiming access and drill roads and drill sites as quickly as possible. No long term impacts are anticipated to occur to habitat since reclamation and reestablishment of vegetation would take place within a few years of project completion. Destruction or disruption of an active burrow or nest may affect individual success, but is not expected to contribute to any detectable loss of viability for the regional population of the species. The disruption of habitat use could extend until operations cease. Lost habitat would not be replaced until the disturbed areas are successfully reclaimed.

Modified Proposed Action Alternative

A reduced exploration program will result in fewer acres of lost pinyon-juniper habitat and a proportional reduction of impacts to the sensitive species found there.

No action

Under the no action alternative there would be no effect to these Special Status species.

Cumulative Impacts

The CESA for sage grouse, as listed in **Table 3** and shown on **Map 4**, includes nesting range (146,491 acres), winter range (235,939 acres) and summer range (416,604 acres). **Map 5** shows the immediate watershed CESA area for other special status animals.

The Sage Grouse CESA boundary was developed to address impacts to birds located in the vicinity of the project area. The birds are blocked in from the west by the Ruby Mountains and the north and eastern boundaries of the CESA were selected to segregate the birds in the vicinity of the project area from the population found on Spruce Mountain. According to NDOW, these two populations are distinct and very little movement occurs between these birds.

Past and present actions in the Immediate Watershed and Sage Grouse CESAs include livestock grazing, range improvements, wild land fires, fire treatments/seedings, recreation, railroads, utility and other ROW's, mineral exploration and mining. Hunters often camp at the Angst camp (NW/4, section 11, T.26 N., R. 59 E.) in the fall. **Table 8** outlines the disturbance acres from historic fire, fires during the 2008 season and fire treatment/seedings in these CESAs.

**Table 8: Historic Fires and Treatments in Wildlife Cumulative Effects Study Areas**

<b>CESA</b>	<b>Historic fires (acres)</b>	<b>2008 Fires</b>	<b>Treatments (acres)</b>
Immediate Watershed	1073	0	539
Sage Grouse			
Summer	3695	1878	0
Winter	753	442	610
Nesting	1381	1878	843

Livestock grazing and range improvement activities are expected to continue consistent with the present actions discussion and as such this action has minimal wildlife impacts.

Recreation activities and impacts may increase as a result of population growth near Elko, Wells, Wendover and Ely. Impacts from recreation would be similar to those discussed under past and present actions.

Wild land fires, fire suppression and burned area rehabilitation are also likely to occur within the CESAs in the next 5 years. This is likely to change habitat plant communities, in some cases to somewhat less diverse communities; especially in the short term because fire rehabilitation seed mixes include limited species.

Mineral exploration activities are expected to continue based on current supply and demand of minerals and commodities. In evaluating cumulative effects, the time frame being evaluated for reasonably foreseeable is eight years. The time frame begins in 2008, the year that the proposed exploration drilling would begin, with drilling continuing over a span of 5 years plus three years of monitoring as required under a plan of operation before a financial guarantee can be considered for release. If this exploration project advances to a mine operation additional mitigation measures will be reviewed and implemented which are specific to mine disturbance.

### **3.4 Mitigation and Monitoring**

The environmental protection measures and reclamation requirements from the June exploration plan, as described and analyzed for the Proposed Action in this EA, are sufficient for this action.

## **4 CONSULTATION AND COORDINATION**

This EA will be available from the Elko District public webpage at [www.blm.gov/nv/st/en/fo/elko\\_field\\_office.html](http://www.blm.gov/nv/st/en/fo/elko_field_office.html) prior to issuance of a decision concerning BLM's approval of the Plan.

### **4.1 Persons, Groups, and Agencies Consulted**

Katie Miller	NDOW, Elko, Nevada
Shane Martin and Connie Davis	NDEP/BMRR, Carson City, Nevada
Lynette Piffero	Elko Band Council
Davis Gonzales	Te-Moak Tribal Council
Julie Stevens	Wells Band of the Te-Moak Tribe of Western Shoshone,
Cheryl Mose Temoke	South Fork Band Council
Rupert Steele	Goshute Business Council
Tianna Buckner	Ely Shoshone Tribe
Maverick Silver, Inc.	

### **4.2 List of Preparers**

Frank Bergwall	Project Lead
Bryan Hockett	Cultural and Paleontology
Lorrie West	NEPA Coordinator
Danielle Storey	Native American Religious Concerns
Nycole Burton	Wildlife, Special Status Species, Migratory Birds
Mark Dean	Hydrologist
Amy Ruhs	Range, Soils
Bruce Thompson	Vegetation, Wild Horses
Tamara Hawthorne	Recreation, VRM
Bruce Piper	GIS Specialist
Mark Coca	Weeds



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- BLM. 1985. Wells Resource Management Plan, Record of Decision. Elko District Office, Elko, Nevada.
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- BLM. 2006b. Surface Management Handbook, Draft 3809 Handbook
- Coats. 1987, Geology of Elko County, Nevada, Bulletin 101, Nevada Bureau of Mines and Geology.
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- NDOW. 2006-2007 Big Game Status.  
<http://ndow.org/about/pubs/pdf/reports/biggame.pdf>.
- Nevada Division of Environmental Protection (NDEP) and the Nevada Division of Conservation Districts. 1994. Handbook of Best Management Practices. Adopted by the State Environmental Commission December 7, 1994.

**APPENDIX A**  
**Recommended Operating Procedures**  
**for Notice Level Operations in the Elko District**

Persons conducting operations on public lands managed by the Bureau of Land Management are required to operate in a manner that will not result in undue or unnecessary degradation to the public lands. The following recommended operating procedures will help prevent undue or unnecessary degradation during exploration related activities.

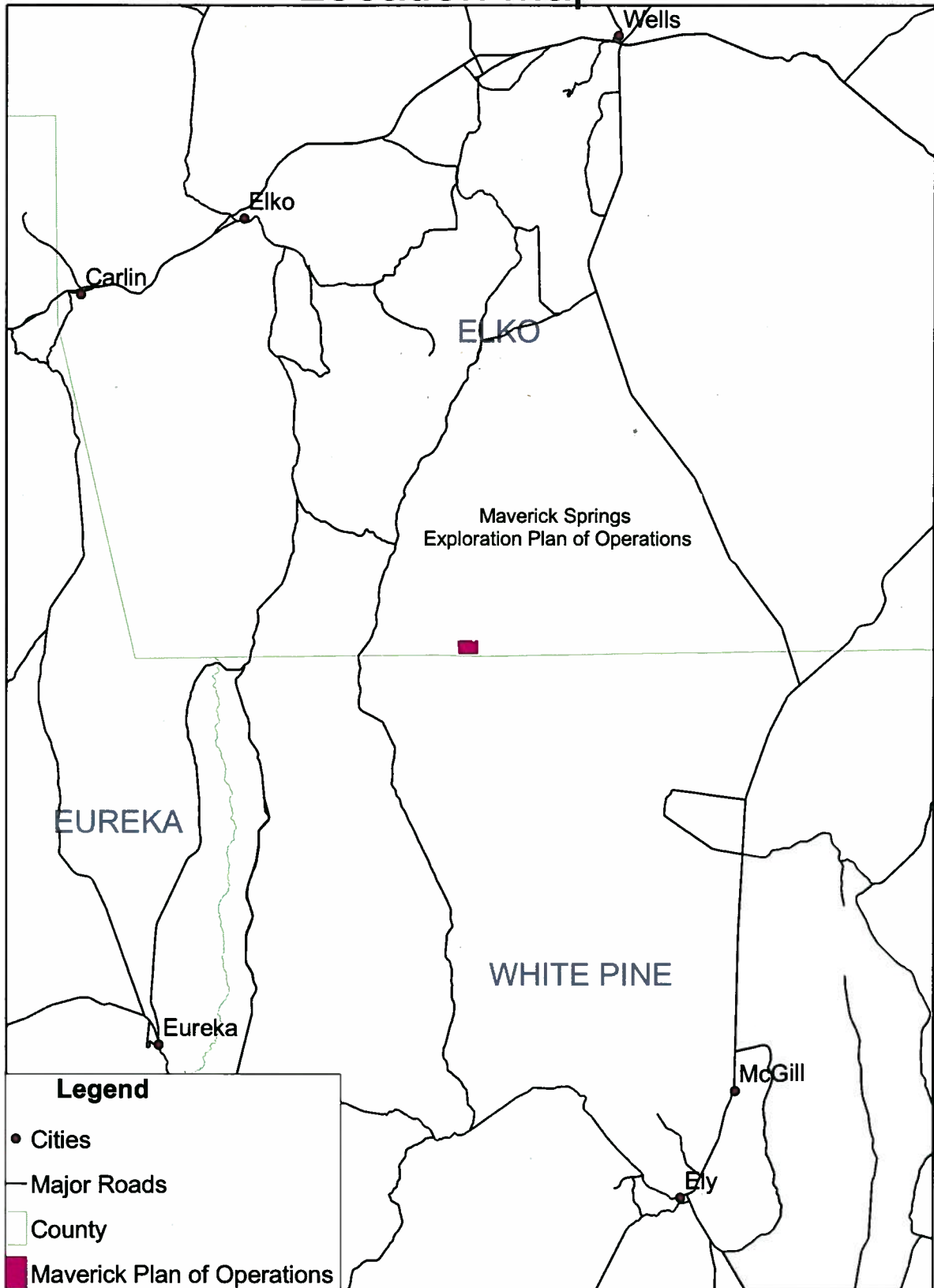
1. Cross-country travel without blading should be used where practical and safe. Where road construction is necessary, access shall be the most direct, safe route with the least amount of disturbance. When cross-country routes become powdered and the vegetation destroyed, they are to be reclaimed to the original grade by ripping and/or recontouring, then reseeded between October 1 and March 31.
2. Roads are not to be bladed directly up drainages. Roads bladed in drainages shall be located a sufficient height above the channel so that fill material does not enter into the drainage channel.
3. Springs and seeps should be avoided by maintaining a distance of 400 feet or more.
4. Low water crossings (no fill) or adequately sized culverts must be used where access roads cross intermittent or perennial drainages. Fill should not obstruct water flow.
5. Where feasible, activities are to be restricted to frozen or dry ground conditions; operations should be curtailed when saturated and soft soil conditions exist.
6. Saturated soil conditions exist when water is flowing on the ground surface, water comes to the ground surface from walking or driving across the soil, the ground surface is spongy when walked on, ruts 3 inches or deeper occur from driving across the ground surface, when vehicles get stuck in mud, and when a dozer is needed to pull vehicles through the mud, etc. Driving on soils in these conditions could result in undue or unnecessary degradation.
7. Drill holes are to be backfilled and plugged according to State of Nevada Regulations NAC 534.360 to 534.450 (NRS 534.020, 534.110).
8. Existing main roads used as access to your project area that are substantially damaged by your operations must be repaired to the condition existing prior to your operations.
9. All bladed roads are to be waterbarred as necessary. The following are recommended spacings for water bars:

<u>Road Grade (percent)</u>	<u>Spacing Between Waterbars (feet)</u>
10 to 14	200 to 100
6 to 10	300 to 200
4 to 6	400 to 300
less than 4	only as needed

10. Final reclamation of roads, sumps, and drill pads is to consist of fully recontouring disturbances to their original grade followed by reseeding between October 1 and March 31. Seed can be broadcast but should be covered, where feasible, with soil using a harrow, dragline, or equivalent piece of equipment. BLM will supply a recommended seed list.
11. During reseeding, seed drilling is preferred. Where broadcast seeding is used, the seed should be covered with soil by using a harrow, dragline, or equivalent piece of equipment. BLM will supply a recommended seed list.
12. Pursuant to 43 CFR 8365.1-1(b)(3), draining of sewage or petroleum products, or dumping of refuse or waste other than wash water from any trailer or other vehicle, except in places or receptacles provided for that purpose, is prohibited.
13. Operators shall not knowingly disturb, alter, injure, or destroy any scientifically important paleontological remains; or any historical or archaeological site, structure, building or object; or cave related site on public lands. When the operator discovers any previously unidentified cultural, paleontological, or cave related resource that might be altered or destroyed by the operations, the discovery shall be left intact and reported to the Elko Field Office (BLM Authorized Officer), which shall evaluate the discoveries, take action to protect, remove or preserve the resource within 30 working days (43 CFR 3809.420).
14. Pursuant to 43 CFR 10.4(g), the operator shall notify the BLM Authorized Officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2). Further pursuant to 43 CFR 10.4(c) and (d), the operator shall immediately stop all activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the BLM Authorized Officer.
15. When a fence is cut to allow access to a site, a temporary gate shall be installed to prevent livestock from passing through the opening; the fence shall be repaired to its original condition or better as soon as possible.
16. Cut or fill material from the construction of a drill pad, sump, trench or road shall not be placed on a fence. All fences damaged by operations shall be immediately repaired or rebuilt.
17. Trenches, sumps, and other small excavations that pose a hazard or nuisance to the public, wildlife, or livestock are to be adequately fenced to preclude access to them.
18. Operators are responsible for preventing the spread of noxious weeds caused by operations on the public lands. Operators are advised to be familiar with noxious weeds in the operating area and to take measures to avoid contributing to the spread of noxious weeds.
19. The following precautionary measures are to help prevent wildland fires. In the event your operations should start a fire, you could be held liable for all suppression costs.

1. All vehicles should carry fire extinguishers.
2. Adequate fire fighting equipment (i.e. shovel, pulaski, extinguisher(s)), and/or an ample water supply should be kept at the drill site(s).
3. Vehicle catalytic converters should be inspected often and cleaned of all brush and grass debris.
4. When conducting welding operations, they should be conducted in an area free from or mostly free from vegetation. An ample water supply and shovel should be on hand to extinguish any fires created from the sparks. During welding operations, extra personnel should be on site to watch out for fires created by the sparks.
5. Report wildland fires immediately to the Elko Interagency Dispatch Center at (775) 748-4000.

# Maverick Springs Exploration Project Location Map



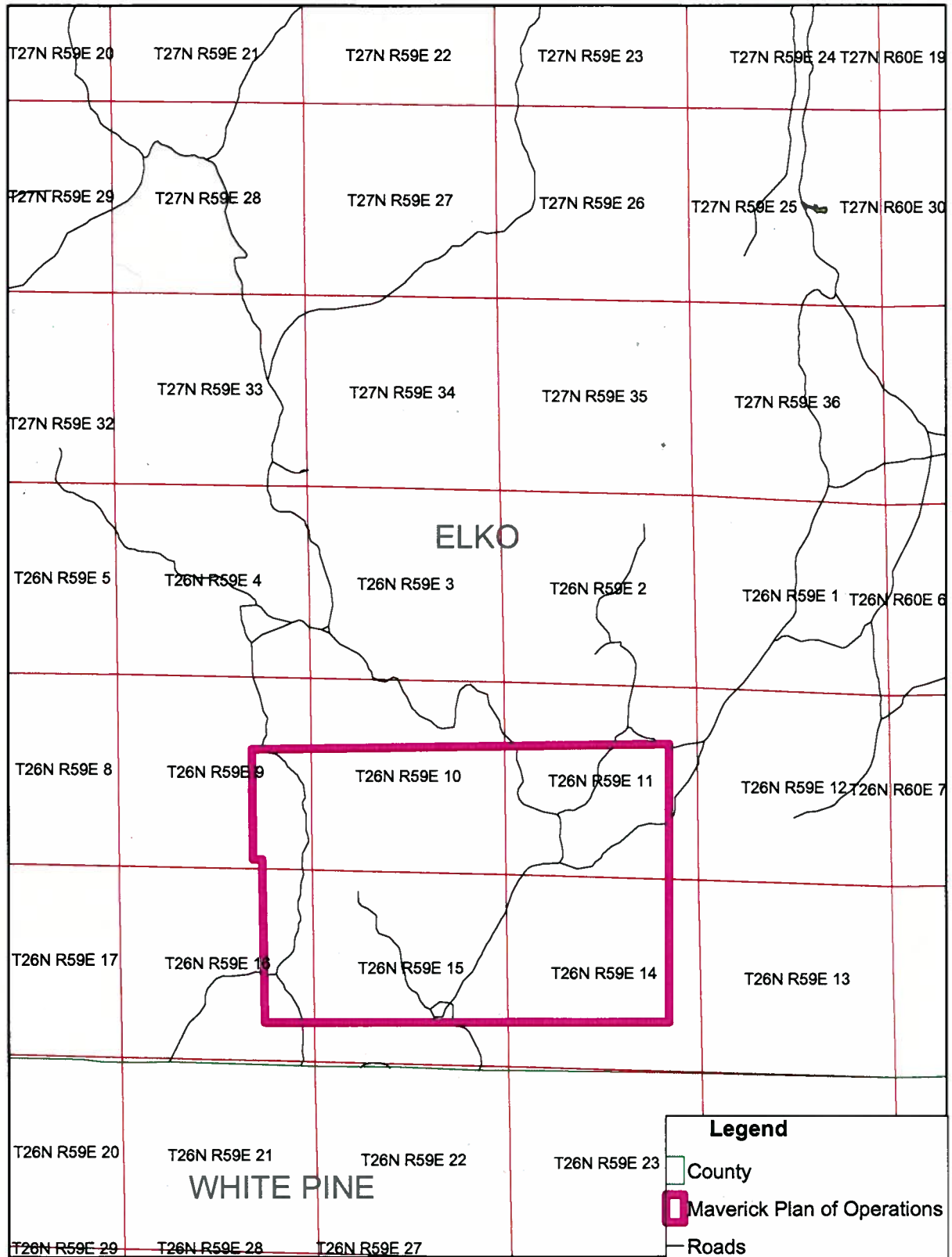
United States Department of the Interior  
BUREAU OF LAND MANAGEMENT  
Elko Field Office  
3900 East Idaho Street  
Elko, Nevada 89801-0611

0 4 8 16 24 32  
Miles

# Map 1

\*NO WARRANTY IS MADE BY THE BUREAU OF LAND MANAGEMENT AS TO THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THESE DATA FOR INDIVIDUAL USE OR AGGREGATE USE WITH OTHER DATA\*

# Maverick Springs Exploration Project Access and Roads



United States Department of the Interior  
BUREAU OF LAND MANAGEMENT  
Elko Field Office  
3900 East Idaho Street  
Elko, Nevada 89801-0611

1:48,000



**Map 2**

"NO WARRANTY IS MADE BY THE BUREAU OF LAND MANAGEMENT AS TO THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THESE DATA FOR INDIVIDUAL USE OR AGGREGATE USE WITH OTHER DATA"

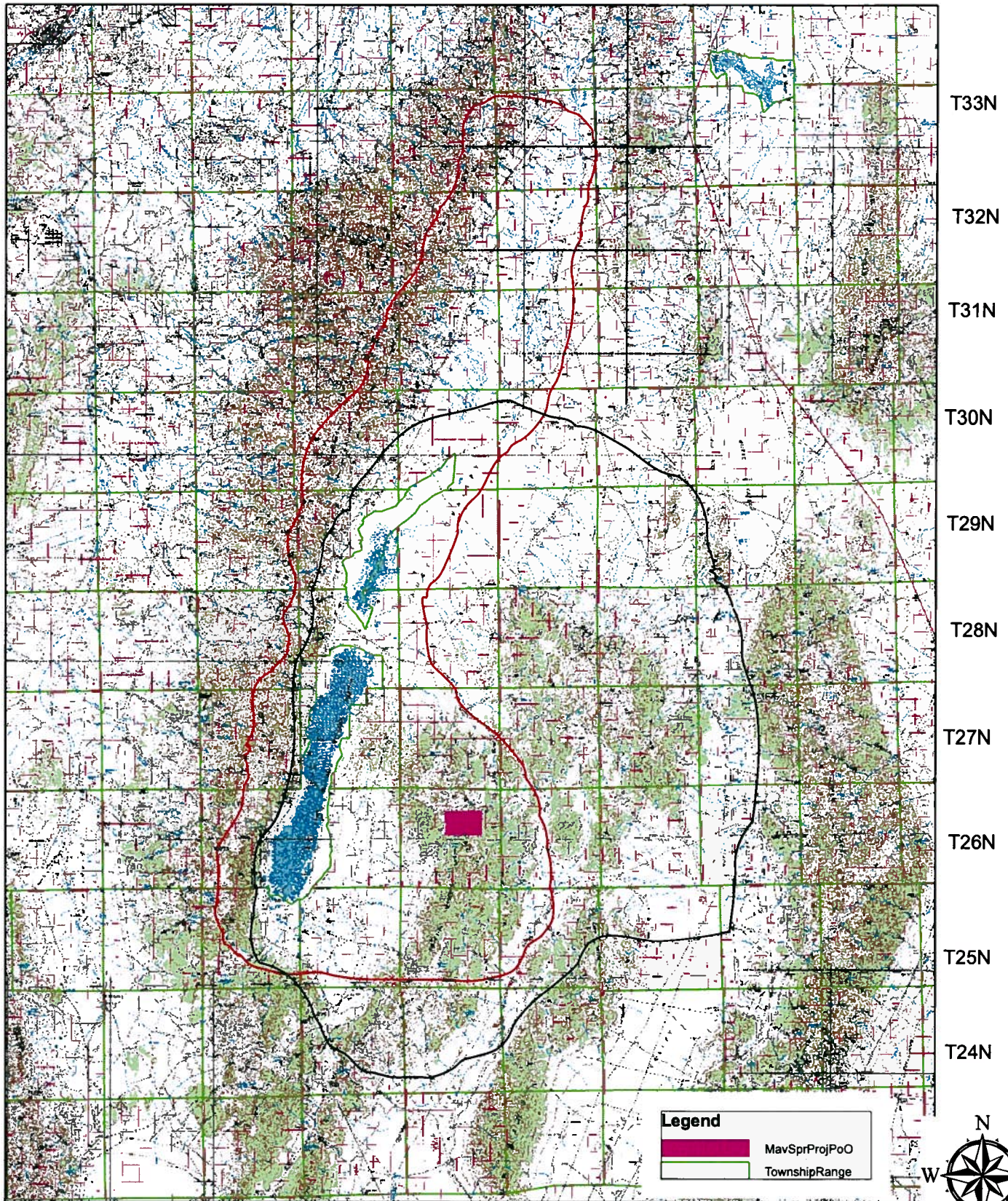






# Maverick Exploration

## Mule Deer & Sage Grouse Cumulative Effects Area



8 4 0 8 Miles

R58E

R59E

R60E

R61E

R62E

R57E

Sage Grouse Area  
Mule Deer Area



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# Map 4

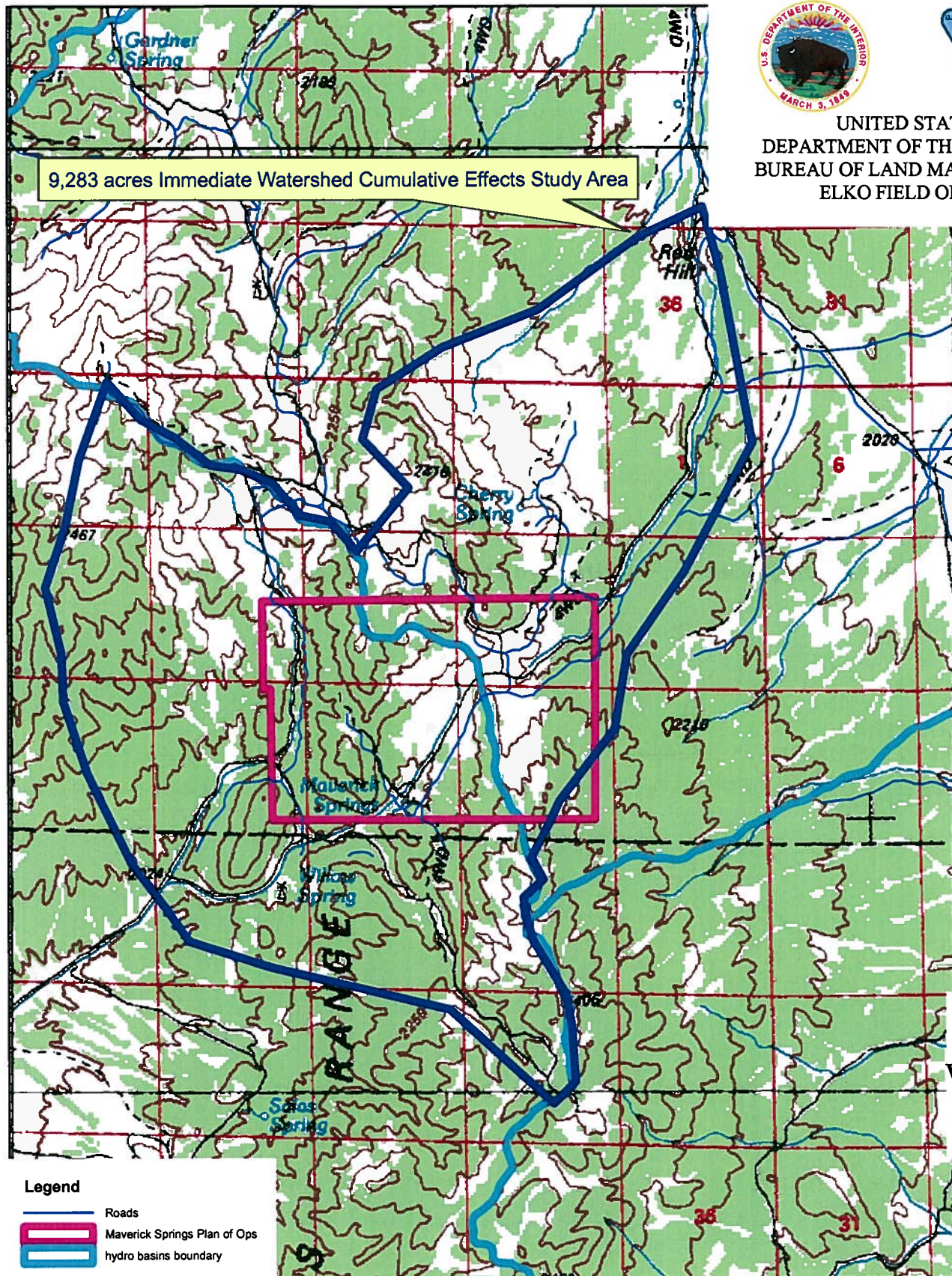


# Maverick Exploration

## Immediate Watershed Cumulative Effects Study Area



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
ELKO FIELD OFFICE



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# MAP 5